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OPERATION AND INSTALLATION **MANUAL FOR E/M SPEED LOG**

ALIZE



03MU006-B

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IND.	Author	Date	Description
A		19/06/03	Initial Version
B	JCN	27/03/06	§ 3.1 : Wires colour

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Drawing F 0125 M

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Drawing F 0126 M

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1. DESCRIPTION

The **ALIZE** is a new generation of electromagnetic speed log dedicated to small ships or pleasure boats. It uses an « intelligent » sensor. The unit comprises a low speed alarm that can control an audio detector. This detector can be inhibited using the keyboard on the log front face.

This alarm is very helpful onboard. In fact, the detection of the tension modification via the speed measurement is faster and more sensitive than via a tractive stress measurement.

1.1 EQUIPMENT DESCRIPTION

Standard equipment includes :

- ☐ One main cabinet with :
 - ◆ 1 LCD Screen indicating :
 - Digital and pseudo-analog speed,
 - Mile totalizer (10^{ème} of mile)
 - Daily mile totalizer (100^{ième} of mile)
 - Water temperature
 - Average speed
 - ◆ « 3 touches » keyboard
- ☐ One « intelligent » sensor fitted with 5m cable.
- ☐ One hullfitting

Options :

- ☐ RGD 100 combined repeater
 - Digital and pseudo-analog speed,
 - Covered distance with reset
 - Covered distance without reset

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1.2 MAIN FEATURES

- ☐ Watertight main cabinet, bracket mounted

Size : 110 x 110 x 35 mm

- ☐ LCD Screen for :

Speed display on circular bargraph

Digital speed display : 0,1 knot definition

Covered distance : 99999,9

Covered distance with reset : 9999,99

Double scale : 30 or 60 nœuds

Average speed

Water temperature

- ☐ Brightness control

1.3 TECHNICAL FEATURES

Power supply :

12 Vcc (+ 30 % - 10 % 15.6 VDC - 10.8 VDC)

Outputs :

- 1 x 1/200^{ième} of mile, potential free contact output, 40V, 500 mA
- 1 potential-free contact alarm output, 50V, 2A
- 1 RS432 NMEA 0183 format
4800 Baud, 8 bits , no parity , 1 stop bit
- 1 speed message
- 1 distance + distance with reset message

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Sensor location

The flat sensor surface measures the water speed along the hull. This measured speed is not equal to the vessel's true speed. Measured speed is lower than vessel's speed. At vessel's extreme fore, near true speed is obtained, but towards the aft of vessel speed value differs. The area along the hull where speed is different from vessel's speed is called the « boundary layer ». Its thickness increases from fore to aft. The main cause is water running along the hull, which decreases up front. Because of the hull profile, hydrodynamic penetration coefficient is minimum in the fore.

Speed does not depend on fouling of the hull located in the boundary layer. Therefore, the ratio of the vessel's speed and measured speed is constant.

The sensor must be located near the bow, as far forward as possible. It must always remain immersed (if the sensor emerges occasionally, this can cause a short disturbance which doesn't effect the total distance information).

The line joining the electrodes of the sensor must be perpendicular to the vessels longitudinal axis.

In case of particular installation, please contact a Ben's agent.

After installation, do not forget to clean the sensor.

DO NOT PAINT THE ELECTRODES – DO NOT GREASE THE ELECTRODES.

2. INSTALLATION AND CABLING

The log is supplied with a bracket for wall mounting. Its inclination is adjustable and insures an optimal using.

The instrument is designed for a battery power supply of 12 volts (-10% +30%). Its average consumption is 150mA (minimum lighting), and 600mA (maximum lighting)

The instrument is protected by a fuse 1A delayed.

The sensor cable is 5 meters long. For greater lengths, use a junction box (max length : 20 meters).

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2.1 LOG CONNECTION

REPEATER CABLE		SENSOR CABLE	
WIRES COLOUR		WIRES COLOUR	
RED	→→→→→→→→→→	RED (or PINK)	
BLACK	→→→→→→→→→→	BLACK (or GREY)	
BLUE	←←←←←←←←←←	BLUE	
WHITE	←←←←←←←←←←	WHITE	
ORANGE	+ 12 V ←←←←←←←←	Power supply battery	
GREY	0 V ←←←←←←←←		
YELLOW	Output 1/200 of mile	→	
BROWN	Output 1/200 of mile	→	
WHITE/ BLUE	TXB RS422 output NMEA	→	
WHITE/YELLOW	TXA RS422 output NMEA	→	
GREEN	ALARM output	→	
PURPLE	ALARM output	→	

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3. ADJUSTMENTS

The keyboard comprises 3 keys :

- DIMMER
- DIST.RST
- CHRONO/ALARM

3.1 Brightness adjustment

Press « DIMMER » to adjust brightness. The lighting level is indicated on the bargraph :

0 corresponds to the minimum lighting

30 corresponds to the maximum lighting

To execute a complete lighting adjustment cycle, press the touch in continuous.

The brightness increases to its maximum and then decreases until quenching.

According to the adjustment stage, press on DIMMER will increase or decrease the lighting.

3.2 Daily Distance Reset

Press DIST/RST to reset the daily distance totalizer.

3.3 Alarm function

Alarm function is dedicated to the small trawlers. It allows a prompt detection of a trawl latching.

Press ALARM to proceed with the alarm threshold recording. The bell drawing appears. The recording can be done only if the vessel speed is higher than 2 knots.

When the vessel speed goes under the alarm threshold, the output relay contacts will be closed.

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It will be open only if :

- the vessel goes to an higher speed,
- the alarm function is inhibited.

The alarm function inhibition is done by pressing again on ALARM. The bell drawing disappears.

3.4 Display Change Function

Press at the same time DIMMER and DIST.RST to display :

1st pushing	daily distance	xxxx.xx
2 nd pushing	Temperature in °C	t xx.x
3 rd pushing	Average speed	A xx.xx
4th pushing	Covered distance	xxxxxxx.x

3.5 Log adjustment

You can go into the adjustment mode by pressing simultaneously the three touches.

3.6 Zero adjustment

When ship is motionless on dead calm water, speed can be above zero. You then have to correct this zero shifting.

Make sure there is no undertow.

You can easily check it by putting sensor back to front to check zero does not change.

If it does, zero can be adjusted by equalizing absolute speed values when sensor is in normal position and is back to front. Do not forget then to put sensor back in correct position (red mark towards ship bow).

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Instead of the distance, the display shows 1 xx.x zero adjustment

The touch DIST.RST becomes ↑ (increase the zero value)

The touch CHRONO/ALARM becomes ↓ (decrease the zero value)

The touch DIMMER becomes ENTER Go to the following menu
“ gain adjustment ”

3.7 Gain Adjustment

Instead of distance, the display shows 2 xxx.x gain adjustment in %

The touch DIST.RST becomes ↑ (increase the gain value)

The touch CHRONO/ALARM becomes ↓ (decrease the gain value)

The touch DIMMER becomes ENTER Go to the following menu
“Temperature adjustment”.

3.8 Temperature adjustment

Instead of the distance, the display shows 3 xx.x Temperature adjustment

The touch DIST.RST becomes ↑ (increase the temperature value)

The touch CHRONO/ALARM becomes ↓ (decrease the temperature value)

The touch DIMMER becomes ENTER (Return to Main Menu).

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3.9 Damping adjustment

Press simultaneously DIST.RST and CHRONO/ALARM to enter in damping adjustment menu.

Instead of distance, display shows 4 xx damping adjustment

The touch DIST.RST becomes ↑ (increase damping)

The touch CHRONO/ALARM becomes ↓ (decrease damping)

The touch DIMMER becomes ENTER (Return to main menu).

Damping setting from 1 to 99 seconds

The zero, gain, temperature and damping values are recorded in the microcontroller EEPROM.

3.10 Chrono function

Press simultaneously DIMMER and CHRONO/ALARM to display 960 (9 minutes 60 seconds) on the main display.

Press a second time simultaneously DIMMER and CHRONO/ALARM to display 600 (6 minutes) .

Press CHRONO/ALARM to launch the account for the regatta start up.

Press DIMMER to return to the speed display.

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3.11 Scale change on the circular bargraph

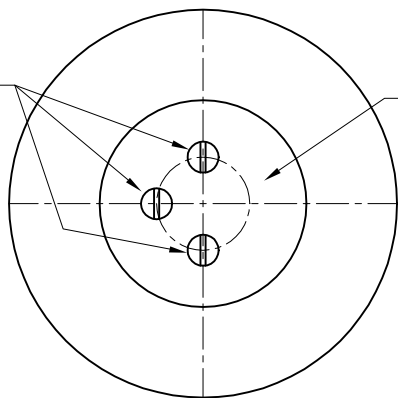
The ALIZE speed log is fitted with an automatic scale change that allows a permanent optimal display

When the vessel speed is higher than 30 knots, the log goes automatically over the 60 knots scale.

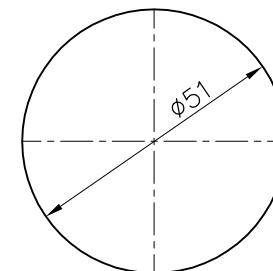
The log will go over the 30 knots scale for speeds under 29 knots.

ELECTRODES
ELECTRODES

CAPTEUR
SENSOR



PERCAGE COQUE
DRILLING HULL



FIL DE SECURITE
SAFETY WIRE

ANNEAU D'EXTRACTION
PULL RING

ECROU CAPTEUR
CAP NUT

PIECE DE COQUE
HOUSING

ECROU
PIECE DE COQUE
HULL NUT

RONDELLE (Option)
WASHER (Optional)

COQUE
HULL

MASTIC SILICONE MARINE
MARINE SEALANT

90
103
5

Ø75

➔ AVANT NAVIRE
BOAT BOW



LOCH ALIZE
CAPTEUR
*ALIZE LOG
SENSOR*

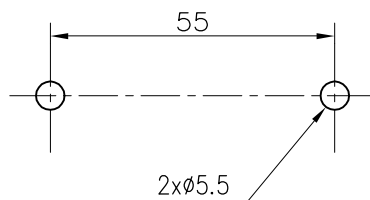
ZAC de Pichaury II
13793 AIX EN PROVENCE
CEDEX 3. BP102000

Dess. <i>Drawn.</i>	Ver. <i>Chec.</i>	Date <i>Date</i>	Folio: 1/1	Ind. 0					
ALLEGRE	NOUGIER	06/03/2001	N° :	F0125-M					

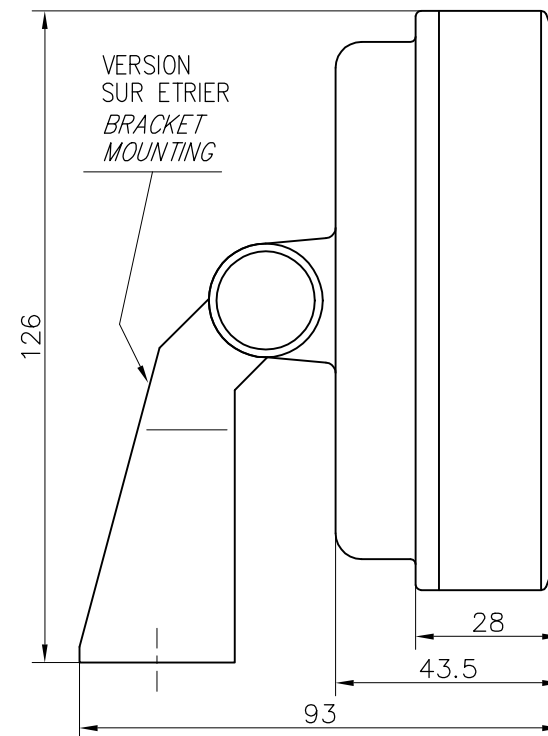
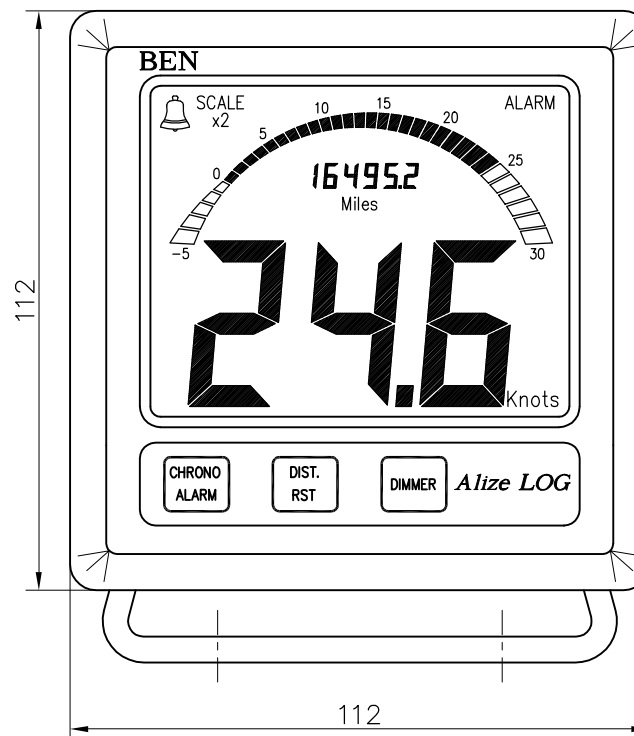
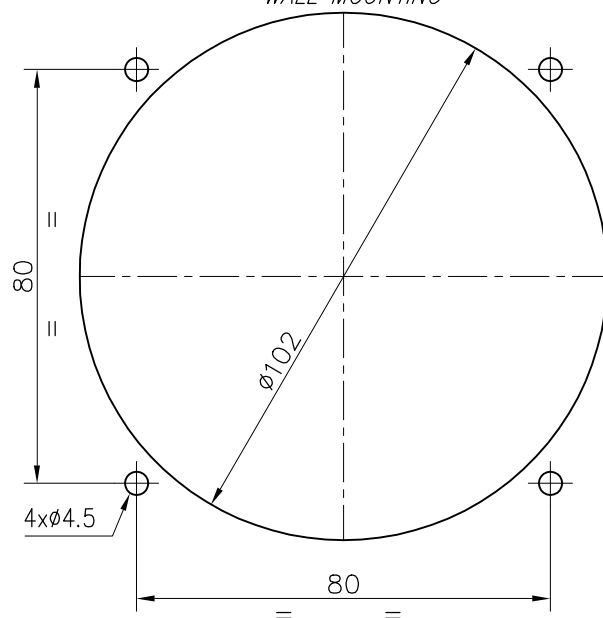
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F0125-M.DWG

PERCAGE
VERSION ETRIER
DRILLING FOR
BRACKET MOUNTING



PERCAGE
VERSION CLOISON
DRILLING FOR
WALL MOUNTING



ZAC de Pichaury II
13793 AIX EN PROVENCE
CEDEX 3. BP102000

LOCH ALIZE
ENCOMBREMENT ET POSE
ALIZE LOG
OUTLINES AND MOUNTING

Dess. Drawn.	Ver. Chec.	Date Date	Folio: 1/1	Ind. 0					
ALLEGRE	NOUGIER	05/03/2001	N° :	F0126-M					

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ALIZE REPEATER CONNECTION

WIRES COLOUR			
RED	}	SENSOR NOT USED	
	}		
BLACK	}		
	}		
BLUE	←----- - RS 422 }	RECEPTION	
	}		
WHITE	←----- + RS 422 }		
	}		
ORANGE	+ 12 V }	POWER SUPPLY	
	}		
GREY	0 V }		
	}		
YELLOW	}	1/200 ^{ème} OF MILE OUTPUT NOT USED	
	}		
BROWN	}		
	}		
WHITE/ BLUE	-----> + RS 422 }	EMISSION	
	}		
WHITE/YELLOW	-----> - RS 422 }		
	}		
GREEN	}	ALARM – not USED	
	}		
PURPLE	}		